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SINGLE AND MULTIPLE OPTOTYPE CHART AFFECTING PRESCHOOL VISUAL ACUITY STATUS

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DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of University Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledgement as referenced work. This topic has not been submitted to any other academic institution or non- academic institution for any degree or qualification.

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ABSTRACT

Purpose: To investigate the effect of single and multiple optoype charts affecting pre-school and also monocular and binocular eyes association with visual acuity score among preschool age 4-6 years old via screening. ***Materials and methods:*** Forty eight subjects among preschooler aged from 4 to 6years old recruited from Tadika Bandar Puncak Alam. The subject was asked to read the Snellen chart letter that being projected in front of them. They were asked to read the chart in two conditions that were with single eye and binocular eyes both with single and multiple optotype been displayed. The best visual acuity (VA) or line that they can read been recorded and convert to logMAR unit. Same method repeated with binocular eyes and patient asked to read both single and multiple optotype chart. Then the Snellen chart was changed to project multiple optotype as the target. ***Results:*** There are significant difference ($p<0.05$) was found between single optotype chart and multiple optotype chart using monocular eye and binocular eye. The mean logMAR using single optotype using binocular eye was rank higher compare to others. Therefore, mean logMAR VA score using single optotype and binocular vision which are using both eyes had high level of agreement with previous study that been done. In binocular vision, signals from both eyes are combined into a single percept and visual performance maybe superior to monocular performance. Viewing binocularly can help a little bit in giving better visual acuity and vision for them especially the children had problem with any one of the eyes. ***Conclusion:*** The visual acuity score by preschool is better using both eyes with single optotype chart compare to other conditions.

Keywords: Visual acuity, Snellen chart, single and multiple optotype, pre-school screening.

TABLE OF CONTENT

CHAPTER II LITERATURE REVIEW

CHAPTER III METHODOLOGY